

41. A plasma processing system, comprising:

a first chamber configured to generate a first plasma therein; and

a second chamber coupled to said first chamber, wherein said second chamber is configured to initially generate a second plasma therein, further configured to lose an ability to generate said second plasma, and configured to receive said first plasma, wherein said first plasma is configured to restore said ability.

42. The system in claim 41, wherein said second chamber is configured to lose said ability in response to a generation of said second plasma, and further configured to regain said ability in response to a reception of said first plasma.

43. The system in claim 42, wherein said second chamber is a tube furnace.

44. The system in claim 43, wherein said first chamber is a tube furnace.

45. A furnace assembly, comprising:

a structure defining a furnace interior, wherein at least a part of said structure is transparent to a radio-frequency wave, wherein said structure is configured to receive a first material that is opaque to said wave, and wherein said structure is configured to interpose between a source of said wave and said first material; and a delivery system in fluid communication with said interior defined by said structure, said system configured to deliver a second material to said first material, wherein said second material is reactable with said first material.

46. The furnace assembly in claim 45, wherein said delivery system is configured to deliver an etchant.

47. The furnace assembly in claim 46, wherein said delivery system is configured to deliver a second material selected from a group comprising fluorine, chlorine, bromine, hydrogen chloride, hydrogen fluoride, hydrogen bromide, sulphur hexafluoride, nitrogen trifluoride, carbon tetrachloride (CCl<sub>4</sub>), carbon tetrafluoride (CF<sub>4</sub>), chlorine monofluoride (ClF), chlorine trifluoride

(ClF<sub>3</sub>), bromine chloride (BrCl), bromine monofluoride (BrF), bromine trifluoride (BrF<sub>3</sub>), bromine pentafluoride (BrF<sub>5</sub>), iodine monobromide (IBr), iodine tribromide (IBr<sub>3</sub>), iodine monochloride (ICl; alpha and beta), iodine trichloride (ICl<sub>3</sub>), iodine pentafluoride (IF<sub>5</sub>), iodine heptafluoride (IF<sub>7</sub>), carbon dichlorodifluoride (CCl<sub>2</sub>F<sub>2</sub>), and NF<sub>3</sub>.

48. The furnace assembly in claim 46, wherein said delivery system is configured to deliver a halogen.

49. The furnace assembly in claim 48, wherein said delivery system is configured to deliver a polyhalogen.

50. A semiconductor fabrication system, comprising:

a first reaction device configured to inductively generate a first plasma, wherein said first plasma comprises an induction blocker, and wherein said first reaction device is further configured to accept said induction blocker in an area that blocks plasma induction; and

a component coupled to said first reaction device and configured to provide said first reaction device with an induction blocker remover.

51. The semiconductor fabrication system in claim 50, wherein said component is a second reaction device configured to generate a second plasma comprising said induction blocker remover.

52. The semiconductor fabrication system in claim 51, wherein said first reaction device comprises a quartz component having an interior defining a plasma induction region; and wherein said quartz component is configured to accept said induction blocker thereon.

53. The semiconductor fabrication system in claim 52, wherein said second reaction device is configured to generate a second plasma comprising a conductive material remover.

54. A cleaning apparatus for an inductively-coupled plasma chamber, comprising:  
a conduit configured to couple to said inductively-coupled plasma chamber; and  
a cleaning chamber coupled to said conduit and configured to provide a metal-cleaning gas to said inductively-coupled plasma chamber through said conduit.

55. The cleaning apparatus of claim 54, further comprising a plasma-generation device around said cleaning chamber, wherein said plasma-generation device is configured to inductively generate a metal-etching plasma within said cleaning chamber.

56. The cleaning apparatus in claim 55, wherein said cleaning chamber is configured to provide said metal-etching plasma to said inductively-coupled plasma chamber through said conduit.

57. A wafer processing system, comprising:

a reactor having a wafer fabrication mode and a reactor cleaning mode, wherein said reactor is configured to receive a metal-containing gas during said wafer fabrication mode, locally generate a plasma during said wafer fabrication mode, receive a metal etchant during said reactor cleaning mode, and refrain from locally generating a plasma during said reactor cleaning mode; and  
a chamber configured to couple to said reactor during said reactor cleaning mode and further configured to temporarily house said metal etchant.

58. The system in claim 57, wherein an interior of said reactor is free of any wafer during said reactor cleaning mode.

59. The system in claim 58, wherein said chamber is configured to transmit said metal etchant in a non-plasma form to said reactor during said cleaning mode.